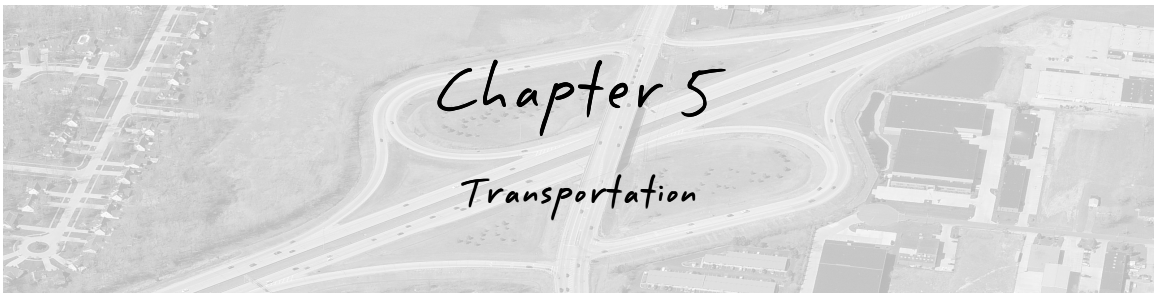


Chapter 5

Transportation

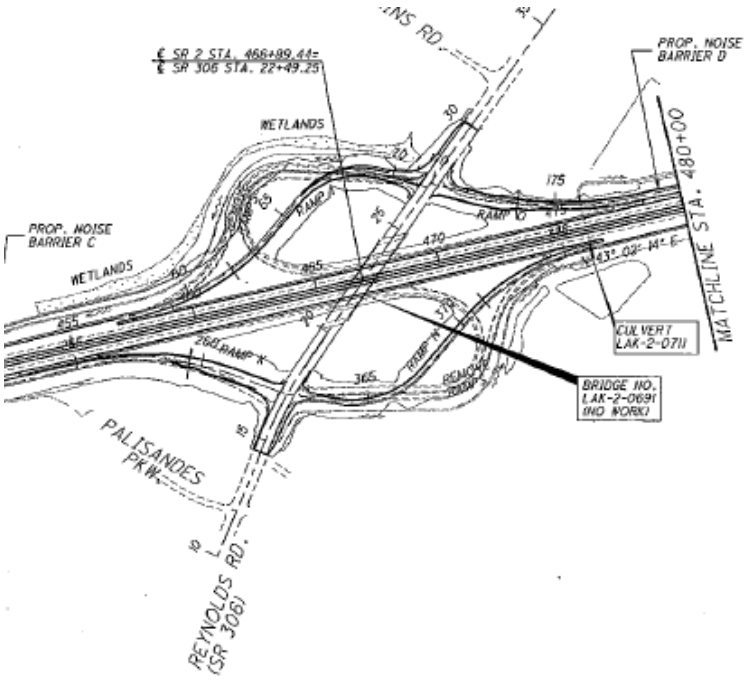
5.1 INTRODUCTION

Mentor has an ideal position in the transportation network of Northeast Ohio. It has direct access to two east-west limited access highways, State Route 2 and Interstate 90. A major north-south limited access contactor highway, State Route 44 is located less than 1/2 of a mile east of the City providing for a connection between Interstate 90 and State Route 2. It is the only limited access highway located between I-271 (western Lake County and Cuyahoga County) and State Route 11 in Ashtabula County. Mentor is also located on two major east-west rail corridors, CSX and Norfolk Southern. Lost Nation Airport is located on land that is in both Mentor and Willoughby and Cuyahoga County Airport is located within ten miles of the community. Mentor also has easy access to bulk freight docks that are located in Grand River Village and Fairport Harbor Village.

Mentor strives to incorporate traffic planning into the various proposed developments within the City. As major developments are planned, Mentor requires the developer to produce a traffic impact study to address the development's impact to the adjacent streets.

Currently, major planning efforts are under way along the Heisley Road corridor in relation to a large scale development directly adjacent to Mentor's Diamond Centre and the City of Painesville.

Figure 5.1: SR 2 / SR 306 Interchange Improvements



A third lane addition is being built for State Route 2 from Vine Street to between State Route 306 and State Route 615 by the Ohio Department of Transportation (ODOT). The plans also call for traffic and ramp improvements along State Route 2 at the SR 306 exits (Figure 5.1). The third phase of the Route 2 upgrades will include an additional lane from Newell Creek, which is east of the SR2 and SR 306 interchange, to State Route 44 South. The plans also call for ramp improvements for State Route 615, and sound walls and lights to be installed from the Willoughby border to SR 615.

Mentor will continue its traffic planning efforts into the future. In addition to the studies that will occur relating to future development, the City will continue to assess its network of streets and traffic signalization. As areas for improvement are identified, steps will be taken to address indentified traffic issues. This may result in signal retiming, traffic calming and additional traffic projects to be incorporated into the Capital Improvement Program (CIP).

5.2 ROADS

There are four distinct functional classifications used to describe the various thoroughfares which make up the road network (Map 10.1). The following NOACA classifications are:

1. Principal arterials or Major Collectors– a highway facility primarily used for through traffic, usually a continuous route.
2. Minor Collectors (roads or streets) – a facility in an intermediate functional category connecting smaller local road and street systems with larger arterial systems.
3. Local roads or streets – a facility to provide access to residences, businesses or other abutting properties.

The city continues to experience a rapid rate of growth as it is Lake County and the region's premier retail center and the sixth largest retail center in the state. It is strategically located in a prosperous northeast Ohio location, and is served by two limited access highways (I-90 and SR-2) which pass through the city. The only part of Mentor that is not served effectively by limited access highways is the southeast corner, near the Concord Township border. Mentor is also served by a US 20 (Mentor Avenue) and five state routes, SR 44, SR 84, SR 283, SR 306, and SR 615.

Local interchanges on State Route 2 at Lost Nation Road, Reynolds Road (SR 306), Center Street (SR 615) and Heisley Road/SR 44 and local interchanges on I-90 at Broadmoor Road (SR 306) and Center Street (SR 615) provide access to the city and feed traffic into the circulation network.

Table 5.1 Local roads per square mile

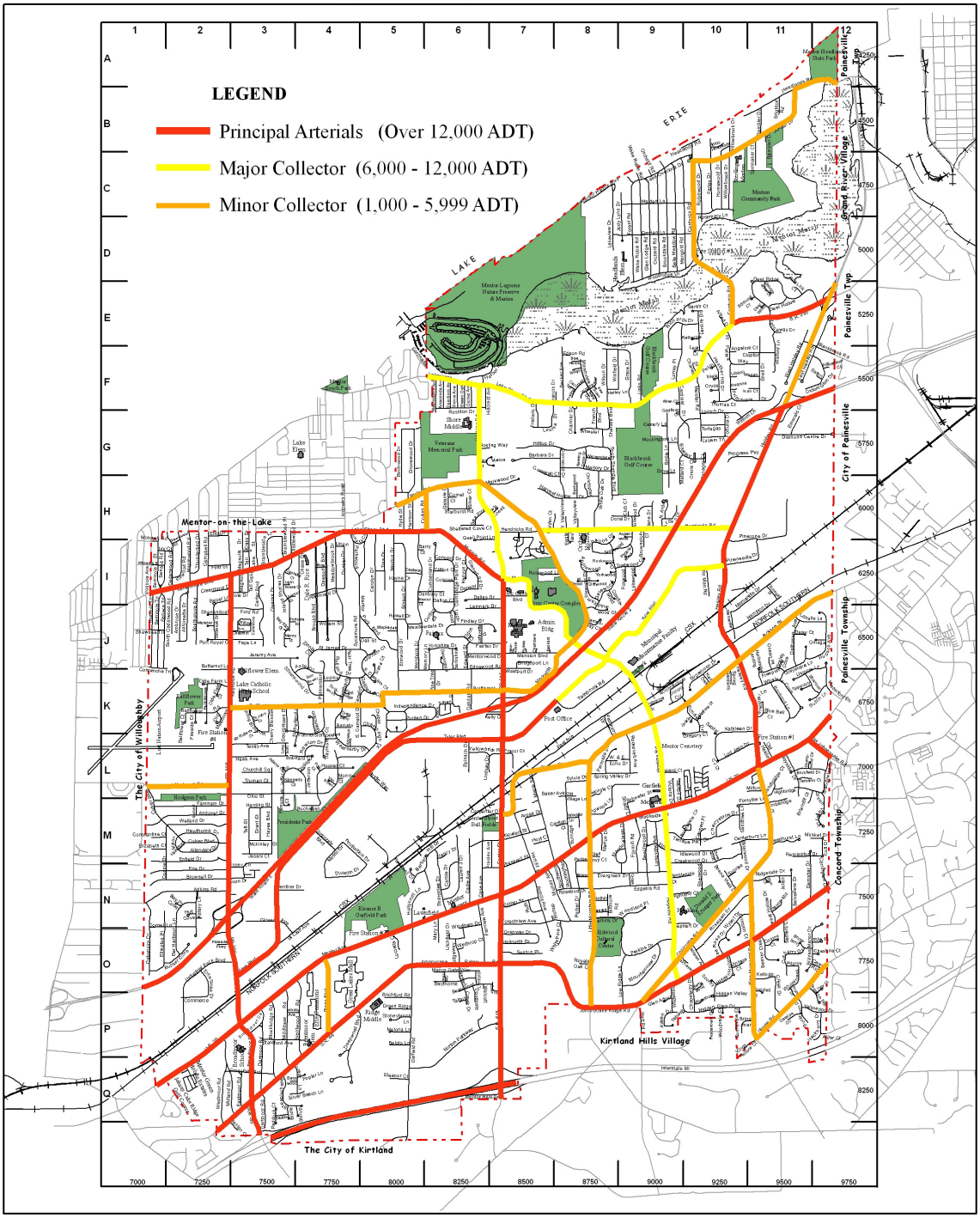
	Area	*Road Mileage*			
Community	*Sq. Mi.*	*Local*	*County*	*State*	*Federal*
Eastlake	6.58	138.68	0	13.18	0
Mentor	***28.4***	***225***	***0***	***30.09***	***7.35***
Willoughby	10.21	68.32	0	12.68	6
Lake County		954.48	151.79	143.72	99.11

Mentor has 225 miles of local roads, all of which are paved with asphalt or concrete (Table 5.1). Mentor has the most mileage of local roads with Eastlake as second in the county with the most amount of local roads. Mentor is the largest city in the county in population and in land area, but it ranks second in linear mile of road maintenance per square mile. Mentor has to maintain 7.9 miles of road per square mile and Eastlake has to maintain 21.1 miles of road per square mile.

Map 5.1: Street Classification

STREETS / FUNCTIONAL CLASSIFICATION

COMPREHENSIVE PLAN



Streets

Constraining Factors – Because it bisects the city, the location of State Route 2 has been a factor which has influenced the traffic flow and development in the City of Mentor. While it is an asset to development of all types, it is essentially a barrier to the north-south flow of traffic. North-south traffic is funneled onto five streets to cross the expressway. There are interchanges or access points to the expressway at three of these five streets. These streets automatically handle higher traffic volumes as other streets feed traffic to them to obtain access to the expressway.

Interstate 90 skirts the southern portion of the city. Interchanges at S.R. 615 or Center Street and Route 306 or Broadmoor Road currently serve the city from I-90. The SR 91 interchange is six miles to the west of SR 306 and the SR 44 interchange is five miles to the east of SR 615 and there are two miles between SR 306 and SR 615. The net effect of this constraint on the system is traffic congestion in the southwest area of the City.

A second constraining factor influencing traffic patterns is the existing street network. The two major continuous east/west streets which connect to adjacent communities are located in the southern portion of the City. Mentor Avenue and Johnnycake Ridge Road traverse the entire city and link Mentor with the adjacent communities. They are subject to transient traffic, that is traffic not beginning or terminating in Mentor but which is traveling through the City to another destination.

A third constraining factor influencing traffic patterns is the railroad tracks. The railroad tracks like State Route 2, divide the City north and south and is a barrier to north and south flow of traffic.

Route 283 in the northern portion of the City also connects to adjacent cities, but is not a continuous and direct traffic movement as it utilizes both Lakeshore Boulevard and Andrews Road through the City of Mentor-on-the-Lake. These three routes also connect to Routes 306 and 615 which funnel traffic to the expressway interchanges.

These constraining factors pose a limitation on the circulation options when moving about the city. They serve as magnets to traffic, thus increasing the traffic volumes regardless of the traffic generated by adjacent land uses.

The City of Mentor has experienced a steady economic and population growth since 1960 when 60 percent of the land was vacant. By 1984, vacant land decreased to 40 percent, and by 2007 to 14 percent, with most of this decline attributable to population growth in the northeast quadrant of the City. While growth will continue at a slower rate in Mentor over the next decade, traffic issues will continue to present themselves due to the central location of the community and the continued growth of central and eastern Lake County.

5.3 AIR, RAIL AND WATER

Air

There are several air transportation facilities accessible to Mentor residents and businesses. Hopkins International Airport and Burke Lakefront Airport provide regularly scheduled passenger flights by major airlines. Locally, Lost Nation Airport and Cuyahoga County Airport

provide service to corporate aircraft, cargo planes and pleasure aircrafts. Approximately twenty-five percent of the operation at the Willoughby Lost Nation Airport, which straddles the Mentor-Willoughby Corporate Line, is business traffic. It is estimated that with its improved runways and navigational aids the airport will continue to service business and pleasure flying as well as corporate aircrafts. At the time this plan was being written, funding for a feasibility study to determine the long-term strategy of the facility was being researched. Results of this research may have a significant impact on the land use composition of the area and should planned utilizing the results of the feasibility analysis.

Rail

There are two major railroad lines traversing the middle of the city. The CSX and Norfolk & Southern lines are located at the southern boundary of the industrial corridor. Both provide freight service to major population centers along this corridor to the east and west of Mentor. Several industries make extensive use of these facilities through the use of rail spurs. The availability of rail service has been an asset in attracting business to the city.

The rail facilities are not currently used for daily passenger service to Cleveland. During the spring of 1985, a six-week pilot rail bus project was conducted. As a cooperative effort between Laketran and the Greater Cleveland Regional Transit Authority (RTA), the rail bus provided daily commuter service between Mentor and downtown Cleveland. The rail bus was well received and provided valuable insight into the potential for this form of mass transit. This concept was studied again in the mid 1990's as the Northeast Ohio Regional Project by NOACA. Another six week trial was conducted with a rail bus in 1997. This time, the passengers were taken from the Euclid Transit Center, St. Clair Road at Babbitt Road to Downtown Cleveland. Interstate passenger rail service is provided by Amtrak. The closest Amtrak Station is located in Cleveland, Ohio and the next closest station is located in Erie, Pennsylvania.

Water

Mentor currently has the Mentor Lagoons Marina and Nature Preserve, which is a man made harbor and a marina for private pleasure boats. It can also be used as a safe harbor for boaters in case of storms. Only Mentor Lagoons and the breakwall at Fairport Harbor qualify as safe harbors in Lake County. The Mentor Yacht Club is also located in this area. The two closest marinas in the adjacent counties are Wildwood State Park in Cuyahoga County and Geneva State Park in Ashtabula County.

There is also a full service bulk freight area in the adjacent community of Grand River with docks that usually ship salt. Currently Mentor is teaming up with adjacent communities to study the feasibility of a crossing Lake Ferry between Lake County and a community in Ontario, Canada.

5.4 ACCESS MANAGEMENT

Access management varies from community to community. Uncontrolled access increases congestion, and decreases the carrying capacity of the road. There are many ways a community can implement access management requirements that will help improve traffic flow and safety along their roads, as well as aesthetics.

Businesses along any street and at cross streets that have unfettered access to the road create traffic problems and a feeling of congestion. Businesses all too often have two or more driveways or curb cuts from the street to provide access when one or a joint access with an adjacent business would be safer and help to reduce congestion. A similar problem occurs in residential areas on main thoroughfares and collector streets. These problems can be reduced by using common drives or drive access points and on corners, where possible, have lot access provided on the adjacent local street in order to reduce the points of potential conflict.

There are many areas where businesses have continuous curb cuts, where the pavement of a business parking lot will meet the road surface along the entire frontage, with no landscape buffer or physical barrier separating them. This causes the street, parking lot, and sidewalk to bleed together as a mass of pavement. Continuous curb cuts create a very unsafe pedestrian environment, because vehicles can cross a pedestrian path anywhere. Continuous curb cuts make it difficult for a driver to find the correct entrance to a business. They also increase stormwater runoff, eliminate any visual buffer between the street and a building, and present an unkempt, unappealing and makeshift appearance of a commercial district. Many access problems along streets in business areas are the result of poor subdivision, zoning and site planning requirements and practices in the past.

Access management is a process for providing access to land development, while preserving traffic flow on surrounding roadways in terms of safety, capacity, and speed. This is done by managing the location, design and operation of driveways, median openings, and street connections along a road. It also includes use of dedicated turn lanes or bypass lanes, to keep turning vehicles from blocking through traffic.

Access management is used to improve vehicular and pedestrian safety, maintain road capacity and reduce congestion, and enhance community character and aesthetics. By maintaining the capacity and level of service of the road, access management protects the substantial public investment in transportation, and reduces the need for expensive improvements. Studies conducted in Florida and Colorado suggests that poor spacing, design, and location of driveways lower average travel speed, and improvements in access management can increase roadway capacity. Research has also shown that access management helps reduce the rate and severity of traffic accidents. Good definition and spacing of driveways also improves pedestrian and bicycle safety, by reducing the potential for conflicts with turning vehicles (Figure 5.2).

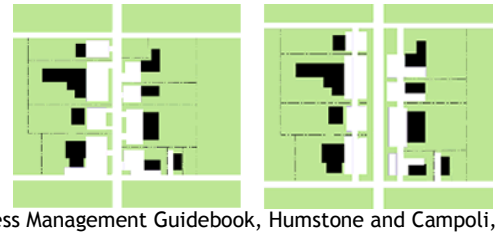
From a land development perspective, access management requirements further the orderly layout and use of land and help discourage poor subdivision and site design. The quality of site access is also important to the success of a development project. The Urban Land Institute *Shopping Center Development Handbook* warns that poorly designed entrances and exits not only present a traffic hazard, but also cause congestion that can create a poor image of the center. Reducing the number and frequency of driveways and median openings also improves the appearance of major corridors. More land is freed for landscaping, the visual dominance of paved areas is reduced, and scenic or environmental features can be protected. Access management requires coordination of land use and transportation objectives. The City can address the interdependence of land division and access and add access management regulations in its zoning code. Access management techniques usually include the following:

What is access management?

Access management is a group of strategies, tools, and techniques that work to improve the safety and efficiency of roads – not by adding lanes but by controlling where vehicles can enter, leave and cross a road.

For example, consider a commercial strip that has developed over several decades along both sides of a four-lane road. Without access management, the businesses with frontage on the road would all have individual curb cuts for their driveways that let drivers get into their often small parking lot. People trying to pull off the street would slow traffic behind them, and if turning left across the oncoming traffic lane, a number of risks arise.

- To cars in the oncoming lane, or cars slowing behind the turning vehicle, who risk accidents.
- To pedestrians trying to walk along the road, at risk when they cross a driveway.
- To bicyclists riding along the shoulder, facing risk as traffic behind the turning vehicle try to use the shoulder to get around the bottleneck.



(Access Management Guidebook, Humstone and Campoli, 1996)

Multiply this by 100 businesses, and there can be a real mess. Safety would be highly compromised, and the resulting traffic snarls frustrate shoppers and commuters alike. The many driveways also reduce the space that could be devoted to landscaping, making the area less attractive. Everyone loses: businesses, residents, and travelers.

This is the situation today along US 20 in Mentor City.

Access management is one solution to this problem. It helps residential developers build safer neighborhoods. It offers ways to group businesses, their customer access, and their parking lots together, reducing costs and maximizing efficiency. It facilitates left turning without slowing traffic or compromising safety. It makes roads safer and more inviting for drivers, pedestrians, and cyclists. It also increases traffic capacity, without having to spend millions to add lanes or build frontage roads.

- Regulation of driveway spacing, corner clearance, and sight distance.
- Increased minimum lot frontage and setback requirements along thoroughfares.

- Restriction on the number of driveways for existing lots, and consolidating access wherever possible.
- Requirements for driveway design elements and conditions requiring their use.
- Requiring internal connections, unified circulation and parking plans between adjacent properties.
- Treating properties under the same ownership and those developed as a unified project as one property for the purpose of access control.

Figure 5.2 Continuous curb cuts are unattractive and unsafe, and make it difficult to tell where a road ends and a parking area begins.

- Using frontage and rearage roads to serve as a common access drive for properties along a corridor.
- Restriction of flag lots and regulate private roads and access easements.
- Minimizing commercial strip zoning and promote mixed use and flexible zoning.
- Minimizing casual lot splits to prevent access and right-of-way problems.

Driveway location and design

Driveway location and design affects the ability of a driver to safely and easily enter and exit a site. If not properly placed, exiting vehicles may be unable to see oncoming vehicles and motorists on the roadway or not have adequate time to stop. If driveways are too narrow or have a small turning radius, vehicles will be unable to maneuver quickly and easily off the road. If the turning radius and width are very wide, fast maneuvers on and off the site pose safety hazards for pedestrians, bicycles, and vehicles. Without an adequate throat or stacking lane, vehicles may block traffic while waiting to enter a site, or block parking rows while waiting to leave.

Driveway location and design can be regulated by amending parking lot design standards in the zoning code.

Driveway number and spacing

There are too many driveways that access our highways, and they are too close together. Decreasing the number of driveways and increasing their spacing can increase safety and traffic flow.

Many businesses along commercial streets, even those on narrow lots, have two or more driveways. Business owners sometimes perceive these driveways as offering easier, more convenient access to potential customers, but they increase the number of conflict points

along the road, and reduce the spacing between driveways. Redundant driveways increase the points where traffic can back up and accidents can occur (Figure 5.3).

Figure 5.3 Redundant driveways along US 20 add points of conflict that make traffic patterns unpredictable, increase the risk of accidents, and contribute to traffic delays.

Reasonable spacing between driveways is also important to the safety and capacity of a road, as well as the appearance of a corridor. Managing driveway spacing is essential on roads intended for higher speeds and intense land use, such as US 20. At higher speeds drivers have less time and distance to react to unexpected situations. In most access management codes, the minimum distance between driveways increases; based on the classification, design speed, and traffic volume of the road.

Driveway number and spacing should be regulated by the zoning code parking area standards. Required shared access, discussed later in this section, can also help fix problems with closely spaced and redundant driveways.

Corner clearance

Driveways located too close to intersections are dangerous, and add to traffic congestion.

Corner clearance is the distance from an intersection to the nearest driveway. Corner clearance standards, and restrictions on driveways in acceleration, deceleration and right turn lanes, preserve good traffic operations at intersections, and the safety and convenience of access to corner properties. Having a larger minimum lot size requirement for corner lots will protect the development potential and market value of corner properties. It will also help assure that these properties do not experience access problems as traffic volumes grow.

Joint and cross access

Few businesses along arterial and collector streets like US 20 have shared or cross-access driveways. Their use can reduce the number of driveways accessing the road, and also cut the amount of short vehicle trips on the road.

Joint and cross access involves connecting neighboring properties, and consolidating driveways serving more than one property. This allows vehicles to circulate between adjacent businesses without having to re-enter the road. Joint access is also used to connect major developments, reduce the number of driveways, and increase driveway spacing where highway frontage has been subdivided into small lots, such as some areas of US 20. This allows more intensive development of a corridor, while maintaining traffic operations and safe and convenient access to businesses (Figure 5.4).

In many communities, larger parcels are often developed as a unified site, with joint and cross access planned from the start, even if the site will be subdivided into several commercial lots. In most commercial areas, land is usually subdivided and developed incrementally over a long period, with no unified plan for a site. Each of the resulting lots is developed individually, with no coordination of access.

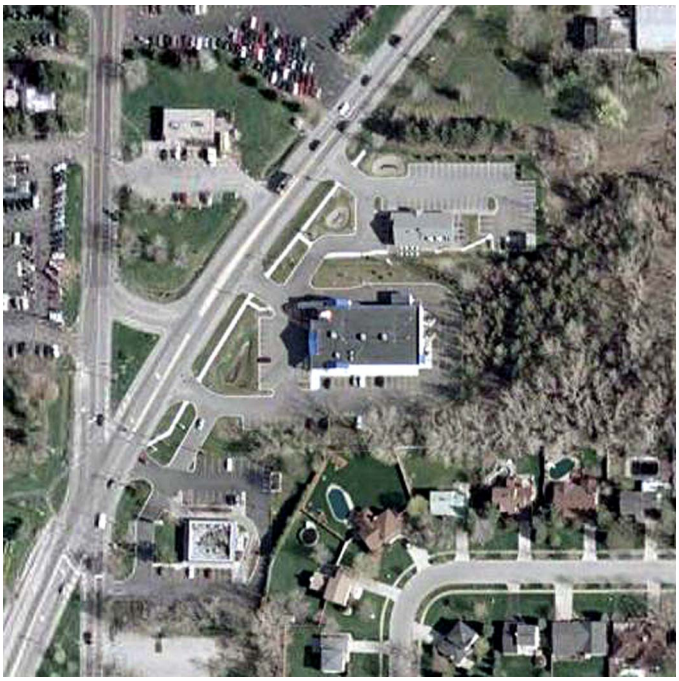


Figure 5.4 Cross-access driveways connect the parking areas of three separate businesses in Amherst, New York.

One way that joint access can be implemented is by prohibiting direct access to the arterial or collector street from outparcels and lots that are carved from larger lots. Instead, the owner of the original parcel must provide access rights from the old lot to the new. If the original host lot is not immediately developed, the developer of the newer lot may be allowed a temporary driveway, which would be closed when the original lot is developed. The easement or access agreement is recorded with the property records, along with a joint maintenance agreement, and an agreement to close the temporary driveway when the joint access system is complete. As an alternative, property owners can also be required to create a binding joint access and cross easement plan before subdividing their property.

For new development on new and existing lots, access rights and stub-out drive aisles to adjacent parcels would be required by zoning code parking requirements, along with the appropriate access easements and/or agreements. For lots that are developed, creating stub-out driveways and recording access easements and/or agreements would be required if the business or use on the property changed, or as a condition of a building permit for major expansion or renovation.

Because access is shared, it will also be easier to share parking areas. The zoning code should be amended to allow a reduced number of parking spaces for a use if access is shared.

Another option is to declare a cross access corridor on the zoning map for parts of the corridor where retail and commercial development will be intense, along with design requirements; for instance, the travel corridor must extend the entire length of each block it serves, or at least 1,000 feet (300 meters) of linear frontage along the arterial, be able to accommodate two-way traffic, and have a design speed of 10 MPH (15 KPH). All properties developing on a corridor would have to include provisions for the cross access corridor.

To implement joint and cross access requirements, the City zoning code or the municipal zoning code and county or municipal subdivision regulations would need to be amended.

Frontage and rearage roads

There are no frontage or rearage roads along Lake County's major highway corridors. Frontage and rearage roads can reduce the number of driveways and conflict points along these highways, but they can also be expensive to build.

Frontage roads can be useful for eliminating driveway connections along major highways; they would serve almost as a collective driveway to a number of properties. However, if not carefully managed, frontage roads can create operational problems at intersections, especially when combined with high traffic volumes associated with commuter routes and commercial areas. If frontage roads connect close to major intersections, severe congestion, long delays, and high accident rates could result.

Frontage roads would be difficult and very expensive to implement along major highways, because the right-of-way is relatively narrow, and they could eliminate the parking area for many businesses. Frontage roads would also create a very wide traffic corridor that would be visually intimidating, and detract from the exurban or semi-rural character of the City.

Figure 5.5 Rearage roads behind businesses in suburban Denver, Colorado.

Rearage roads, also called backage roads, function much like frontage roads, only they are placed behind areas to be developed. Rearage roads allow for a greater distance between their connection with cross streets and the intersection of those cross streets with major highways, eliminating problems with congestion (Figure 5.5). Rearage roads can be implemented over time by acquiring right-of-way – a process that may be costly – or through a method similar to the cross access corridor scheme described in the previous section.

Medians

Most major arterials have a limited amount or no medians. Medians can control the location and reduce the number of left-hand turn points, and eliminate congestion caused by stopped cars turning from the passing lane.

Raised or grassy medians in the center of a road separate opposing lanes of traffic and restrict turning and crossing movements. Studies from around the nation show that roads with raised medians are safer than those with undivided thoroughfares or center two-way left

turn lanes, where traffic is far less predictable, and left hand turns can create accident- and congestion-prone conflict points.

As with driveways, the spacing and design of median openings is important to the safe and efficient operation of the highway. Safety benefits are reduced where median openings have inadequate storage – the length of the stacking area for cars waiting to turn – or are too close together, increasing the number of conflict points.

Medians also provide a refuge for pedestrians and bicyclists crossing a road, and can provide visual appeal and relief if they are landscaped. Considering the importance of the nursery industry in the City, landscaped medians can help reinforce a unique "sense of place" by showcasing the products of area nurseries. Some communities have "adopt-a-median" programs, where a small sponsorship sign is displayed to identify a business or group that paid to landscape and maintain a stretch of median.

Consider this: the fast-growing suburbs of Denver, Phoenix, Kansas City and San Francisco have some of the nation's strictest access management regulations. They also have prospering commercial districts, and access management has not deterred new businesses.

When highways are upgraded, it is recommended consideration be given to the use of landscaped medians instead of a continuous center turn lane to divide opposing lanes of traffic.

Possible Business Concerns

Businesspeople may object to access management because they believe it makes access less convenient for impulse customers and delivery vehicles. However, it has no effect on the demand for products and services they offer. Studies show access management generally does not harm local businesses.

Local businesses that depend upon drive-by traffic may raise concerns that their patronage will be hurt by medians and driveway limitations. Others may claim they will be affected because customers and delivery vehicles will find it less convenient turning into a dedicated driveway, rather than just pulling off the road into a parking lot with a continuous curb cut.

Several studies were conducted in the 1990s to find the potential economic effects of access management. Due to the proprietary nature of sales information and the factors that affect business activity, analysis of this issue has been difficult. Most studies have focused on business owner perceptions of impacts, before and after case examples, or generalized comparisons of business activity across corridors.

In 1999, the Kansas Department of Transportation studied 15 businesses that had filed inverse condemnation lawsuits on access related issues. In nearly every case, the landowner had claimed that access management would have devastating effects on their business and the highest and best use of their property. Some had been compensated for potential impacts. Each property was studied to find if the economic impacts had been realized.

In all but one of the cases either the claimant was still in possession of the property and operating the business, the property was being used for the same use by a different operator, or the use of the property had been upgraded. The only exception was where a main road was

relocated, and two gas stations remained on the old road, which was converted to a frontage road. In this case, drivers had to go miles out of their way to reach the frontage road, and the gas stations went out of business.

The Texas Department of Transportation conducted a study of the economic impacts of left-turn restrictions in the mid-1990s. Key findings included the following:

- Perceptions of business owners before a median was installed were more pessimistic than what usually happened.
- Business owners reported no change in pass-by traffic after median installations.
- Most business types (including specialty retail, fast-food restaurants and sit-down restaurants) reported increases in numbers of customers per day and gross sales, except for gas stations and auto repair shops, which reported decreases in the numbers of customers per day and gross sales.
- Most adverse economic impacts were realized during the construction phase of the median installations.
- Employment within the corridors experienced upward trends overall, with some exceptions during construction phases.
- When asked what factors were important to attracting customers, business owners generally ranked "accessibility to store" lower than customer service, product quality and product price, and ahead of store hours and distance to travel.
- About 94% of business owners reported that their regular customers were at least as likely or more likely to continue patronizing their business after the median installation.
- Along corridors where property values were studied, the vast majority of land values stayed the same or increased, with very few exceptions.

Iowa State University conducted a statewide study of the effects of access management on business vitality in 1996. Results showed that:

- Corridors with completed access management projects performed better in terms of retail sales than the surrounding communities. Business failure rates along access managed corridors were at or below the statewide average for Iowa. Although this suggests that access management projects generally did not have an adverse effect on the majority of businesses, some businesses may have been negatively impacted.
- 80% of businesses surveyed along access managed corridors reported sales at least as high after the project was in place. Relatively few businesses reported sales declines associated with the access management project, although these business owners clearly felt that they were hurt by the project. The firms perceiving negative impacts were a mixture of business types.
- Similarly, about 80% of businesses reported no customer complaints about access to their businesses after project completion. Those businesses that tended to report most complaints were highly oriented toward automobile traffic.
- In all cases, 90% to 100% of motorists surveyed had a favorable opinion of improvements made to roadways that involve access management. The vast majority of motorists thought that the improved roadways were safer and that traffic flow had improved.

Although several studies assessed the potential economic damage from access management, none have examined the potential long-term economic benefits. Poorly designed access not only hurts the character and efficiency of a corridor, but also its economic vitality over time.

Property values that have increased rapidly during commercial development tend to decline after the area is built out if the character and efficiency of the corridor is hurt in the process. The result is a pattern of disinvestment as successful businesses choose other, higher quality locations. This pattern is seen throughout the region, including Vine Street in Eastlake, and Euclid Avenue in Wickliffe and Painesville Township.

(Studies compiled in *Economic Impacts of Access Management*, Kristine M. Williams, AICP, Center for Urban Transportation Research, University of South Florida, 2000.)

5.5 TRAFFIC GENERATORS

Traffic generators are land uses which serve as magnets for attracting people. Uses such as educational facilities, retail malls, large apartment complexes or large industrial employers are common traffic generators.

Figure 5.6 Heisley Rd./ SR 2 Interchange

The locations of the primary retail and industrial generators has not changed substantially since 1967, however, a tremendous expansion has taken place. Great Lakes Mall has expanded and resulted in the development of the Erie Commons, Great Lakes Plaza and numerous other multi-tenant retail stores in that area. While the primary location of the retail trade has not changed, there has also been additional retail development on the eastern side of the city. Target has been built adjacent to the Creekside Commons which houses Kohls, Dicks and Borders.

Figure 5.7 Classic Auto Group campus

While new cars are generally thought of as retail, Classic Auto Group has been growing since its founding in 1979. Originally, only Classic Chevy was located on Center Street and Tyler Boulevard, Classic has expanded to include eight other brands. Classic Auto Group is a considerable traffic generator because it brings in customers from other communities inside and outside of Lake County.

In the industrial corridor, the development of industrial parks with major employers, such as Lincoln Electric and Steris, has increased the drawing power of that area. Other traffic generators in the area are Lakeland Community College, Mentor High School and Lake Catholic High School.

Major traffic generators locate to take advantage of the accessibility offered by expressways and arterials, often locating near interchanges which already generate traffic, thus compounding the traffic volumes. Retail facilities which wish to locate in areas of already high traffic volume further increase the volume by generating more traffic. The combined effect of both traffic generators and constraining factors is reflected in local traffic patterns and traffic flow. This is true in the rapidly developing Heisley Rd. / SR 2 area. Significant growth of all types has occurred over the past decade. Hotels, retail, industrial, and offices have been added to the area, creating a traffic generator.

Traffic patterns in Mentor are further influenced by the commuting patterns of the work force and the labor force. Almost three-fourths of the city's residents work outside the city. Their work locations are primarily to the west. Conversely over half of the work force coming into Mentor commutes into the city. As a result, the transportation system, primarily the expressway interchanges, must handle large volumes of traffic traveling in opposite directions at the same time. This mix of outbound and inbound traffic is a result of traffic patterns from both the residential areas to the interchange and from the interchanges to the industrial areas. It creates periods of peak traffic volumes which correspond to the morning and evening commuting "rush". The opening of the 615 / I-90 interchange and the major improvements to SR 2 will greatly aid in reducing peak flow issues.

The most consistent generator of traffic is residential development. While commercial, industrial and educational facilities generally have peak traffic times; residential developments can generate traffic practically all day. The volume is not as high but the rate of generation is the most consistent and continuous. The street layout of many of the residential developments has also influenced the traffic patterns and problems in the city. A substantial number of developments do not provide interconnecting streets with adjacent developments. This forces all traffic to exit at one location, generally on already heavily traveled arterials, for even local trips. The interconnection of developments could alleviate some of the city's traffic congestion. The plan recommends increased interconnectivity with future developments in the City.

5.6 TRAFFIC

Limited Access Highways

There are two limited access highways that serve Mentor, State Route 2 and Interstate 90. State Route 2 is more of a local limited access highway while I-90 serves more intercounty and interstate traffic. Each day there are 79,150 vehicles entering Lake County on SR 2 at the Euclid/Wickliffe border and only 18,980 vehicles use Route 2 where it merges with US 20 in Painesville Township.

64,300 vehicles use I-90 from the Cuyahoga and Lake County border and 52,890 vehicles use I-90 at the eastern border of Lake and Ashtabula Counties. Both limited access highways have seen increases in the amount of traffic that uses them, but I-90 has seen 117.3% increase since 1984 while State Route 2 has only seen a 58.1% increase (Table 5.3).

Table 5.2 Traffic Counts

Route	Location	1984	1992	2005	△% 1984-2005
US 20	West Corp. Line	17,600	29,260	18,900	7.4%
US 20	SR 306	26,900	33,240	23,220	-13.7%
US 20	SR 615	13,220	19,150	22,010	66.5%
US 20	Heisley Rd	13,550	17,880	15,890	17.3%
US 20	East Corp. Line	15,720	17,880	15,890	1.1%
SR 84	West Corp. Line	5,540	7,690	7,890	42.4%
SR 84	SR 306	18,450	17,640	13,230	-28.3%
SR 84	SR 615	10,620	13,200	13,440	26.6%
SR 84	East Corp. Line	7,060	9,390	13,400	89.9%
SR 306	At SR 84	12,730	13,450	16,500	29.6%
SR 306	At US 20	26,480	34,870	33,120	25.1%
SR 306	At SR 2	20,160	28,380	24,380	20.9%
SR 306	At I-90	26,730	28,870	27,190	1.72%
SR 283	West Corp. Line	13,850	15,090	15,390	11.1%
SR 283	At SR 306	15,540	16,510	16,970	9.2%
SR 283	At SR 615	13,720	11,810	11,670	-14.94%
SR 283	At Corduroy	10,550	13,800	12,400	17.54%
SR 283	Heisley Rd/SR 44	3,030	4,580	4,300	41.9%
SR 283	East Corp. Line	3,030	4,580	4,300	41.9%
SR 615	At I-90	2,520	2,610	18,100	618.3%
SR 615	At SR 84	7,800	9,640	16,040	105.6%
SR 615	At SR 2	17,060	28,880	14,410	-15.53%
SR 615	At US 20	15,150	22,020	24,030	58.6%

Source: 1984, 1992, 2005 ODOT Traffic Survey Reports

Table 5.3 Highway Traffic Counts

Route	Location	1984	1992	2005	△% 1984-2005
SR 2	West Corp. Line	49,060	67,070	71,810	46.4%
SR 2	SR 306	37,330	44,990	58,160	55.8%
SR 2	SR 615	35,550	45,230	55,090	55.0%
SR 2	Heisley Rd/ SR 44	33,120	45,230	55,170	66.6%
SR 2	East Corp. Line	33,120	42,190	55,170	66.6%
I 90	West Corp. Line	38,700	37,810	64,300	66.2%
I 90	SR 306	24,200	37,810	64,300	165.7%
I 90	SR 615	24,200	37,810	52,890	118.6%
I 90	East Corp. Line	24,200	37,810	52,890	118.6%

Source: 1984, 1992, 2005 ODOT Traffic Survey Reports

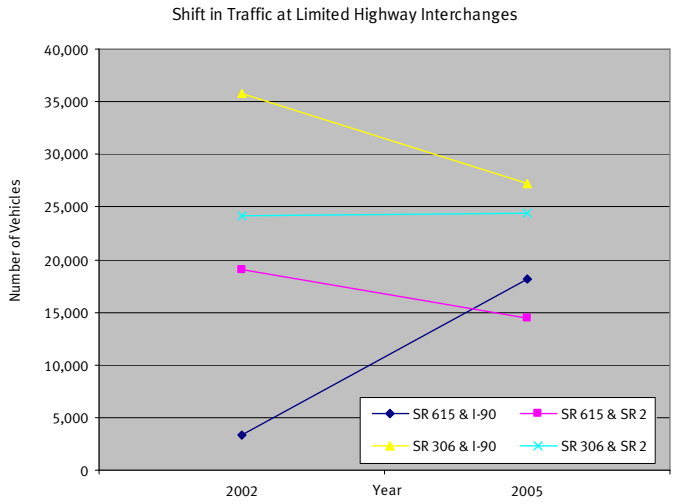
State 615 and Interstate 90 Interchange

One of the biggest changes to the Mentor road network was the building of the Interstate 90 and State Route 615 interchange. This new interchange has taken traffic away from the interchange at SR 615 and SR 2 and the interchange located at SR 306 and Interstate 90. This interchange has provided easier access to southeastern Mentor, along with access to Kirtland, Kirtland Hills, Concord Township and Chardon Township.

This improvement has also facilitated the Newell Creek mixed use development.

Table 5.4 Interchange Traffic Counts

Route	Location	2002	2005	△% 2002-2005
SR 615	At I-90	3,330	18,100	443.5%
SR 615	At SR 2	19,100	14,410	-24.6%
SR 306	At I-90	35,840	27,190	-24.1%
SR 306	At SR 2	24,190	24,380	0.8%



5.7 PEDESTRIAN AND BICYCLE ACCOMMODATIONS

Bikeways provide for an alternate form of transportation, and an increasingly popular form of recreation. The bicycle is an efficient alternative to the automobile, and is easy to park, non-air polluting, and a healthy form of exercise. The bicycle is also a noiseless transportation alternative which could alleviate some traffic congestion if properly blended into existing land uses and traffic patterns. The two primary drawbacks to cycling are: the weather, which can deter usage during several months of the year, and the lack of designated lanes, which separate bicycles from motor vehicles.

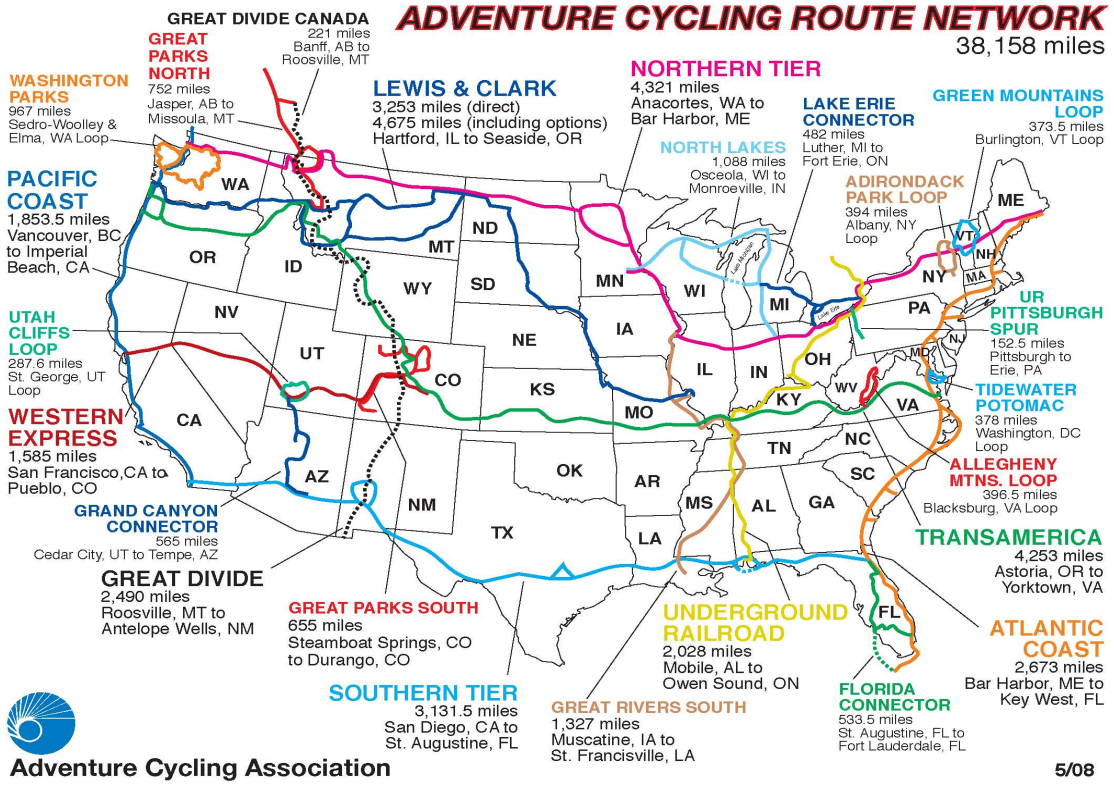
Mentor's city-wide bikeway system was designed to link the Civic Center with the most densely populated areas of the city. From 1987 to 1989 a multi-use path was constructed near and through the Civic Center complex. In 1989, a program objective of the Capital Improvement Program (CIP) was the development of a city-wide bikeway and sidewalk plan. By 1999, 2.75 miles of bicycle lanes had been constructed. Recently, Mentor, along with Oberlin and Avon Lake were named bicycle friendly communities by the League of American

Bicyclists. Construction continued and by the end of 2000, records indicate 6.25 miles of bicycle lane and 3.8 miles of multi-use path had been constructed. By 2005, Mentor had 8.3 miles of bicycle lane and 4.8 miles of multi-use paths. Currently, Mentor has completed 11.1 miles of bicycle lane and 4.8 miles of multi-use paths.

The first section of Mentor's city-wide bikeway system was designed to link the Civic Center with the two most densely populated areas of the city and is completed. Lakeshore Boulevard in the northern end of the City has been identified by The Northeastern Ohio Area-Wide Coordinating Agency (NOACA) as a location for a regional bikeway facility. It is included in the NOACA Lakefront Bikeway stretching from Lorain to Ashtabula, a portion of this stretch is completed. Additional bikeways are planned: class I (path), class II (lane), and class III (on-street bike route signs posted) with the goal of providing a connected city-wide system to improve safety and provide an alternative means of travel.

Adventure Cycling Association is a nonprofit organization that inspires people of all ages to travel by bicycle for fitness, fun, and self-discovery. It was founded in 1973 and has 44,500 members nationwide. They research and produce cycling maps for Adventure Cycling Route Network, one of the largest route networks in the world at 38,158 miles (and growing). One of their trails is the Northern Tier Trail that starts in Anacortes, WA, and ends in Bar Harbor, ME. This 4,322 mile trail divides in Cleveland into a northern and southern route. The northern route runs along Lake Shore Blvd. in Mentor and the southern route runs along Johnnycake Ridge Road, also in Mentor. The two trails rejoin in Painesville City.

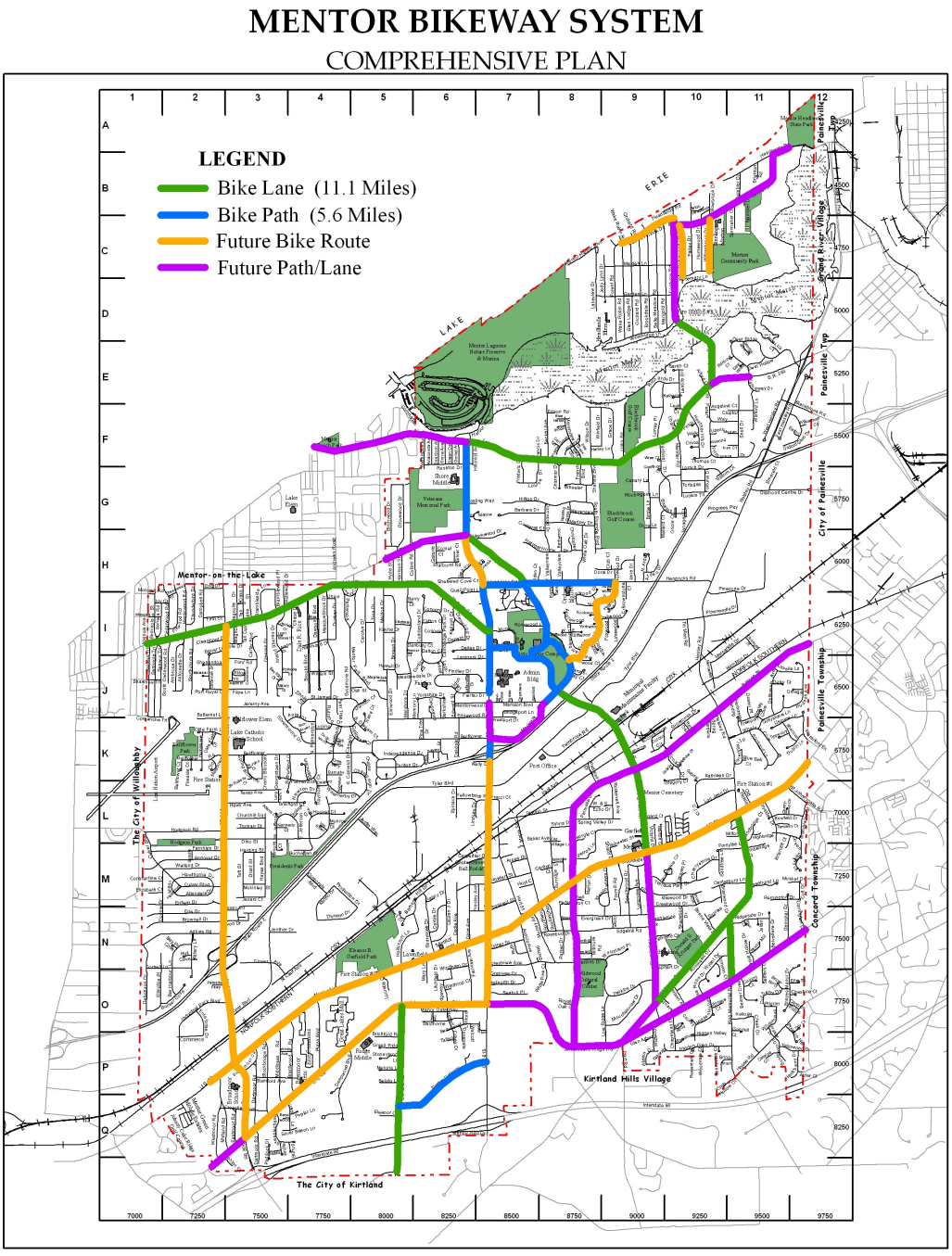
Map 5.2: Adventure Cycling Map



The City of Mentor is a regional leader in the provision of quality bikeway systems to its residents. This is a major quality of life issue. Bikeways are shown on Map 5.3.

Map 5.3 shows that the City plans on adding additional bike lanes and paths. The addition of these lanes will help make Mentor a safer bicycle community. Currently, NOACA rates parts of the road network as being suitable only for experienced bicycle riders. These roads are roads that have high levels of traffic and no bike lanes or paths.

Map 5.3: Bikeway System



The City has emphasized bikeways as part of the annual Capital Improvements Plan (CIP). New bike lanes are planned for Adkins Road and for Plains Road in the 2009 to 2013 Capital Improvement Plans. While the CIP includes additional bike lanes, attention should still be paid to including a bikeway component in the planning for the Mentor parks and recreational facilities as they are developed. In addition, the City should consider bicycle access in the planning and approval of new residential, commercial and recreational developments.

Sidewalks

The pedestrian system is an important aspect of an efficient transportation network. In a community with limited public transit, sidewalks become an important element for safe and efficient travel. Current subdivision regulations require the installation of sidewalks with all new residential and commercial development. Many new developments supplement the sidewalks with walkways which provide links to other neighborhoods, parks, schools and village green areas. There are, however, areas which do not have sidewalks. Many of these areas are adjacent to facilities such as schools and parks, which have a high volume of pedestrian traffic. Providing for pedestrian safety in these areas of the city should be a priority.

The program must be continued to address both the need for additional sidewalks or bikeway facilities in areas not currently served and the condition and maintenance of the existing sidewalks throughout the city.

The overall goal of the Safe Routes to Schools program is to encourage parents and children to consider alternatives for school travel that do not involve automobile travel, thus reducing congestion and improving air quality around our schools. This will result in a healthier lifestyle for those who choose to walk or bicycle to school. As part of the Safe Route to Schools Program, a School Travel Plan will be developed. The School Travel Plan will identify potential projects to encourage safe transportation of children to schools. Ways to promote safe travel include Encouragement (using events to encourage students to try walking and biking); Education (teaching students important safety skills for walking and biking and promoting driver safety); Engineering (creating physical improvements to the infrastructure surrounding the school, including the creation of safer crosswalks, sidewalks and pathways); and, Enforcement (using local law enforcement to ensure drivers obey traffic laws).

A comprehensive sidewalk plan identifying those areas currently served by sidewalks and identifying priority projects (unserved areas) should be undertaken. Any proposed crosswalk locations must meet the criteria of the Ohio Manual for uniform traffic control devices.

The Capital Improvements Plan also has line items that would improve the sidewalk system by providing handicap ramps. These ramps will conform to ADA guidelines. The Capital Improvements Plan also has a line item that would provide new school zone flasher signs for the 13 school zones in the city.

5.7 PUBLIC TRANSPORTATION

Bus

According to the 1990 Census Transportation Planning Package (CTPP), less than one-half of one percent of all employed Mentor residents used public transportation to reach their work destination. According to the 2000 Census, that percentage increased to 0.9%. In 2007 the figure increased to 1.7%, (2007 American Community Survey). According to the 2000 Census, there were more people walking to work, 266 commuters, than rode public transportation, 239 commuters. In the figures from 2007, the number of commuters taking public transport outnumbered the number of commuters walking to work, 440 commuters to 257 commuters.

Public transit service is provided almost exclusively by Laketran on four of its six fixed routes in Lake County.

Laketran fixed Route #1 runs from Lakeland Community College and connects the City of Mentor with the City of Painesville, Lake County's Government Center, and Lake Erie College, via SR-306 and SR-20, essentially an east-west crossing across the southern tier of the City.

Fixed Route #2 connects Mentor to Willoughby and Wickliffe via Route 20, while fixed Route #3 links Mentor with Eastlake and Willowick via SR 306 and Lakeshore Blvd.

Fixed Route #6 connects Mentor to Lakeland Community College, Shoregate Shopping Center, the Shops of Willoughby Hills and Great Lakes Mall via Vine Street and Mentor Ave. and Plaza Boulevard.

At Shoregate Shopping Center, Routes 3 and 6 interconnect with GCRTA (Greater Cleveland Regional Transit Authority) Route 39, which provides access to Downtown Cleveland. The Cleveland Hopkins Airport can be accessed by the Rapid Transit Red Line at Tower City at this point. At the Shops of Willoughby Hills, Route 6 interconnects with GCRTA Route 94, which provides access to Richmond Town Center, Legacy Village and Cuyahoga Community College East. Route 2 connects with GCRTA Route 28 at East 276 Street in Euclid. Route 28 provides service to the Rapid Transit Red Line at the Windermere Station. The Red Line provides Service to Public Square and Hopkins Airport.

In addition to the fixed routes, daily express commuter service is provided by Laketran to Cleveland's central business district leaving from Mentor's Market Street Park-and-Ride lots via SR-2 and I-90 with eight buses daily. Routes 1, 2, and 3 also provide access to the Lakeland Park- N-Ride facility.

Laketran also provides a dial-a-ride service for all Mentor residents upon 48 hour notice. This service operates Monday through Friday 6:00 a.m. to 6:00 p.m. Laketran service routes are shown on Map 5.4.

Figure 5.8: Park N Ride

Interstate Bus Service

Interstate passenger bus service is provided by Greyhound. The closest station is located in Cleveland, Ohio with the next closest station located in Ashtabula, Ohio.

5.8 GATEWAYS

The city's gateways are generally defined only by signage and/or plantings. The various entries have plantings maintained by the Mentor Beautification Committee.

While gateways are important along the I-90 and Route 2 entrances to the city, the existing interchange requires separate gateway features. An option to this extensive development would be to create a main entrance feature along Route 2, as opposed to each exit ramp, one on the east approach to the city and one on the west. With this option in place, features on the exit ramps could be minimized, or completely eliminated.

The primary emphasis for the development of gateways into the city is proper placement, and the level of expenditure to create the gateway should be relative to the volume of traffic moving through the area.

Existing and proposed gateways are shown on Map 5.5.

Highway Signage

The exit signs on the limited access highways give an indication of what is at the next exit. Only two of the six interchanges located in Mentor actually have signs that say 'Mentor', and one of those signs has another community listed. There are other signs located along SR 2 that indicate the three Mentor exits and the mileage to them. There is also a sign along I-90 just before SR 615 that states Mentor, Kirtland Hills next right.

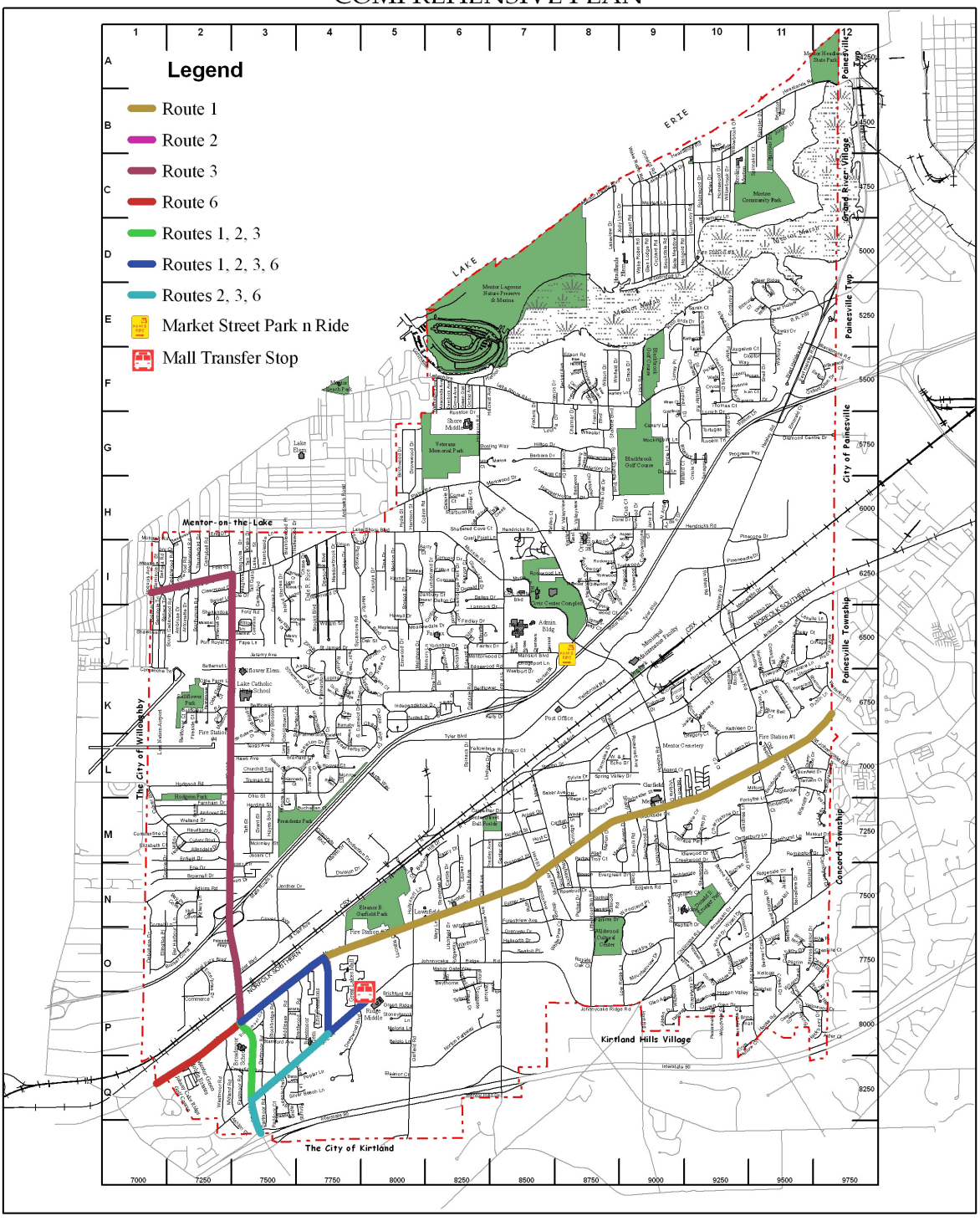
Table 5.5 Highway Signage

Exit	*Signage*
SR 2 & SR 306 N	Mentor on the Lake
SR 2 & SR 306 S	Kirtland
SR 2 & SR 615	Mentor
SR 2 & Heisley Road	Heisley Road, Headlands Beach, Grand River
I-90 & SR 306	Mentor, Kirtland
I-90 & SR 615	Center Street

Map 5.4: Laketran Routes

LAKETRAN SERVICE ROUTES

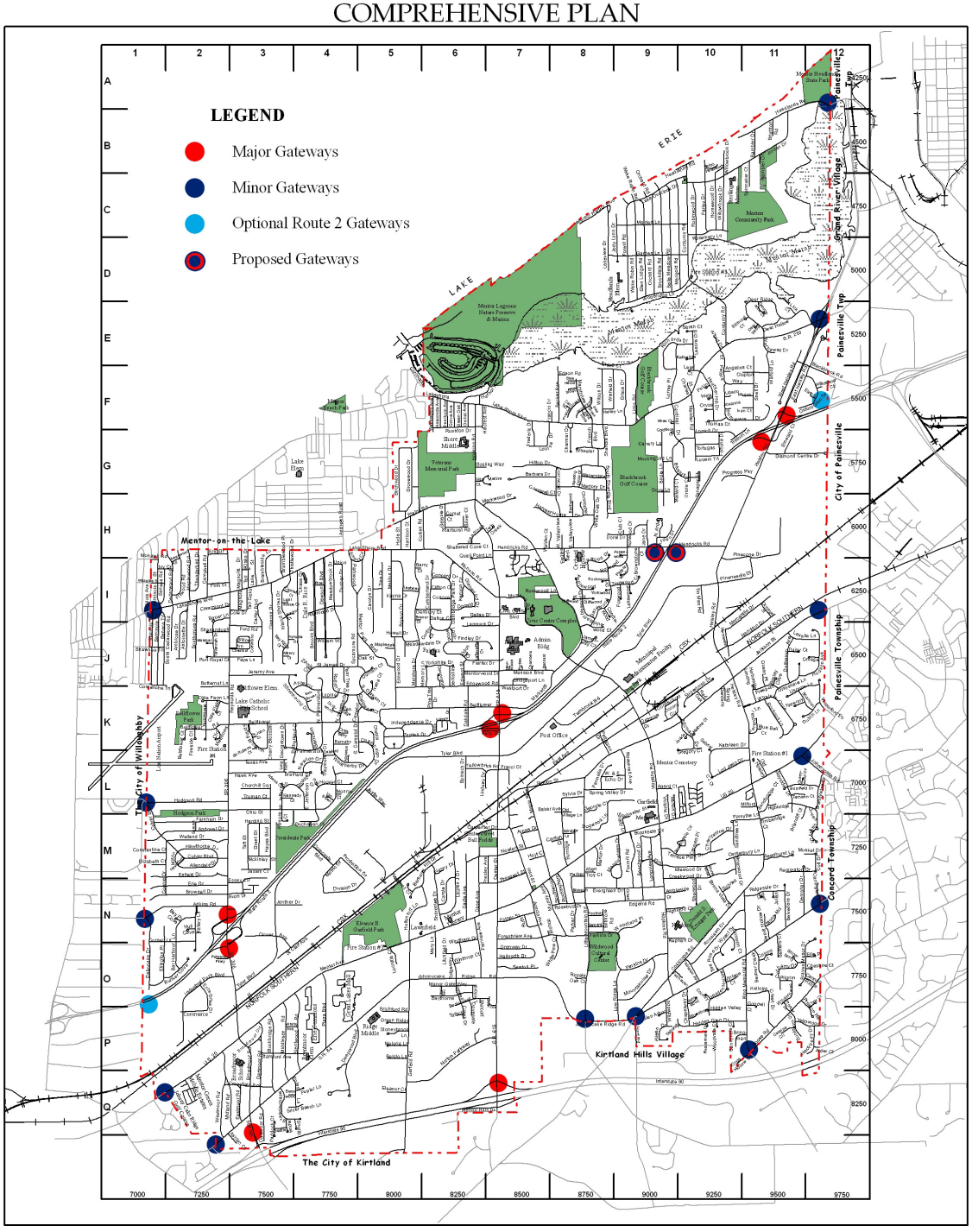
COMPREHENSIVE PLAN



Map 5.5: Gateways

CITY GATEWAYS

COMPREHENSIVE PLAN



5.9 PROPOSED UPGRADES

Various intersections throughout the city have been upgraded with the addition of turn lanes that allow vehicles to turn left or right without delaying other traffic that wishes to continue along the road. This helps with flow of traffic throughout the city.

Additional intersections will be studied by the City, NOACA, ODOT and the County Engineer to determine if new lanes are warranted. These evaluations will be based on traffic counts and evaluations, current and future conditions and physical conditions. Additions of new lanes to streets are costly in design, building and right-of-way costs. Not every intersection studied will get an upgrade. The Capital Improvement Plans has identified Mentor Avenue at Sharonlee Drive, Mentor Avenue at Garfield Park/Lucretia Court, and SR 84 at King Memorial Road as intersections to be studied for possible left turn lanes.

The impact of increased traffic also impacts the road network resulting in the need for roadway widenings which may, or may not, require additional right-of-way. Currently these proposed widenings include:

1. Widening of Heisley Road to four lanes between Jackson Street and Mentor Avenue.
2. Additional lane & intersection improvements to Sections of SR-84 from S.R. 615 east to Chillicothe Road. Additional lanes (to 3) with sidewalks.
3. Construction of a privately funded road connecting Diamond Center to Heisley Road south of current intersection of Diamond Center and Heisley Road.
4. Diamond Center Drive
5. Extension of Plaza Blvd., north to Tyler Blvd. via Clover Avenue.
6. Widening of Plains Road from Hopkins to Mentor-on-the-Lake border. The new road will have two eleven foot lanes and two 4 foot bike lanes.
7. Construction of Hopkins Road overpass at both the Norfolk Southern railroad and CSX tracks, subject to continuing evaluation of traffic needs.
8. Section of Hoose Road from King Memorial Road to East Corp. Line. Widening (30 ft.) storm sewer, curbing.
9. Section of Blackbrook Road from SR-44 to East Corp. Line. Widening and storm sewer system.
10. Mentor Avenue
11. Section of Adkins Road from SR-306 to West Corp. Line. Widening and storm drainage. This project will include a 10-foot wide bike bath from Kittery Lane to SR 306 and 5-foot bike lanes on either side of Adkins from Kittery Lane to the Willoughby border.
12. Section of Broadmoor Road (SR-306) from Mentor Avenue to SR 84. Additional lanes (to 4)
13. Section of Jackson Street from Hopkins Road to East Corp. Line: Widening

These are shown on Map 5.6

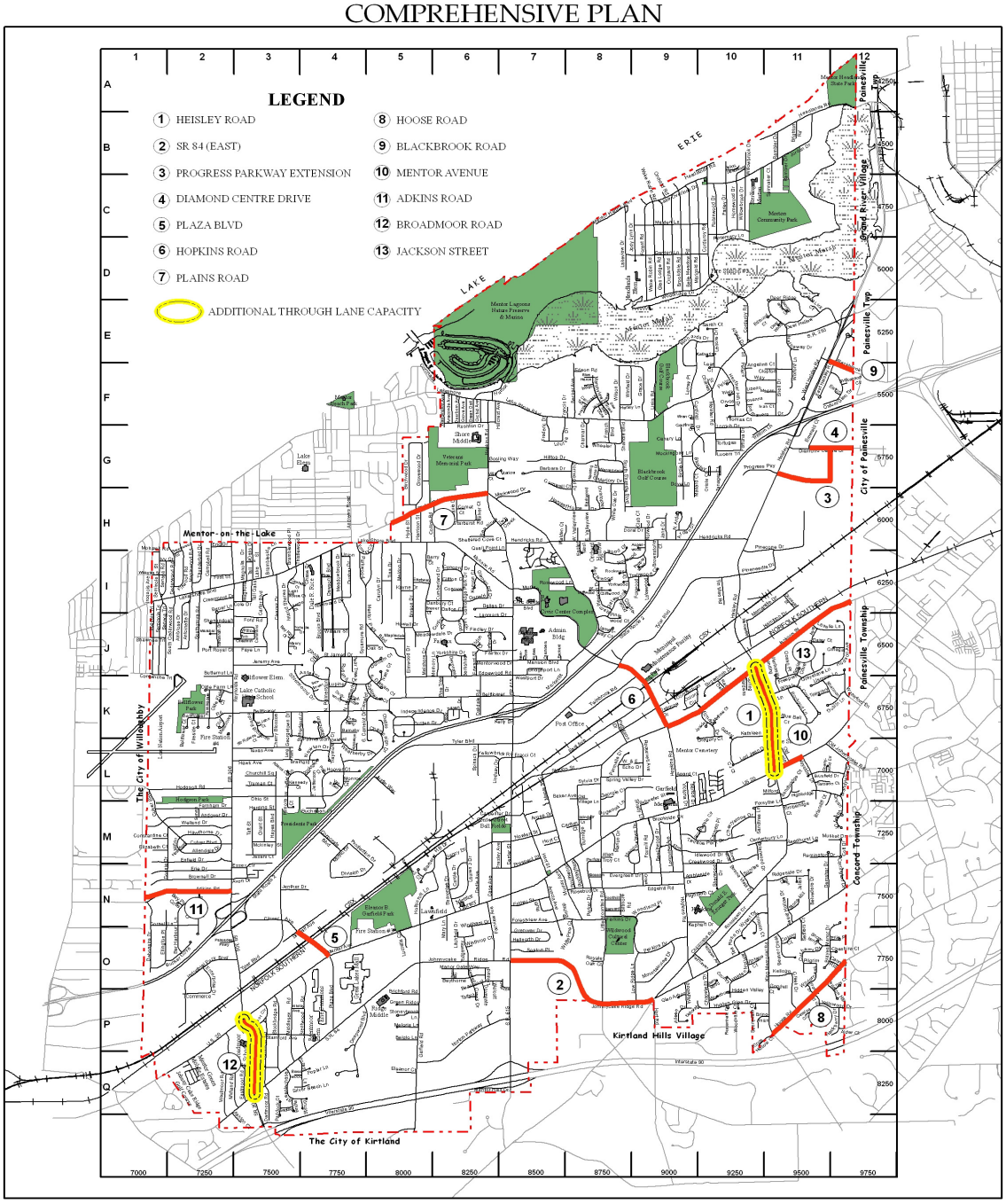
In addition to the changes resulting from widening, several new street alignments have been proposed by the city. These include:

- Construction of an access road from Lakeshore Blvd. to serve the Mentor Lagoons area (alignment not fixed).
- Pinecone/Diamond Center interconnect (alignment not fixed).

Map 5.6: Proposed Upgrades

PROPOSED ROAD WIDENINGS

COMPREHENSIVE PLAN



5.10 GOALS AND POLICIES

GOAL 1:

"PROMOTE AND DEVELOP A TRANSPORTATION PLAN THAT PROVIDES FOR A DIVERSE RANGE OF USERS, INCLUDING RESIDENTS OF ALL AGES AND ABILITIES, SCHOOL ACTIVITIES, BUSINESS COMMUTERS, COMMERCIAL AND INDUSTRIAL LABOR FORCE, RETAIL SHOPPERS, VISITORS, AND PEDESTRIANS AND BICYCLIST."

Policies:

A. Provide access to the interstate system to minimize the number of non-local trips on the local street system.

B. Ensure that adequate roadway capacity is available for any new or modified land uses and that it fosters an orderly pattern of growth.

C. Promote standards that minimize City maintenance requirements.

D. Promote a local street system that encourages interconnections and alternative access.

E. Promote a local street system that discourages through traffic and promotes a free flow of movement by use of access management. Access management is a group of strategies, tools, and techniques that work to improve the safety and efficiency of roads – not by adding lanes but by controlling where vehicles can enter, leave and cross a road.

F. Consider the use of "Traffic Calming Techniques" where appropriate.

G. Develop unique, place making Gateway Features at key locations.

H. Utilize the municipal planning commission as a cursory review agency for future road projects regarding connectivity, access management and general traffic circulation.

GOAL 2:

"PROVIDE ALTERNATIVE TRANSPORTATION OPPORTUNITIES FOR RESIDENTS."

Policies:

A. Support the delivery of alternative modes of transportation by public and private suppliers including employer based programs.

B. Support the provision of transportation alternatives as part of selected City programs through available County and regional agencies as well as nonprofit institutions.

C. Consider the provision of bikeways along with any transportation improvement.

D. Provide access for the handicapped as an integral part of any transportation system.

E. Consider the needs of pedestrians in any transportation improvements.

F. Provide accessibility to pedestrians, bicyclists, and alternative mode users within and between neighborhoods, public spaces, park facilities, business districts and to regional facilities.

G. Consider additional water trails / hiking paths in long-term recreational planning.

GOAL 3:

"ENSURE PUBLIC SAFETY."

Policies:

A. Provide fire protection, emergency medical services and police service to the community through a cost–effective and efficient delivery system to maintain a safe environment for the public.

B. Implement, in accordance with the Capital Improvement Plan (and necessary financial resources) all intersection, road widening, and new alignment improvements as noted in this chapter.

C. Maintain subdivision regulations regarding the placement of sidewalks, and explore the installation of sidewalks in older areas of the city in which development predated these regulations. Provide sidewalks on public lands where they are needed, especially where access to schools and parks will enhance their utilization.